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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,908

02/10/2006

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EXAMINER

CANTELMO, GREGG

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

05/26/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/563,908		AKIYAMA ET AL.	
	Examiner		Art Unit	
	Gregg Cantelmo		1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-17 is/are rejected.
- 7) ☒ Claim(s) 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/10/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement filed January 10, 2006 has been placed in the application file and the information referred to therein has been considered as to the merits. The only references considered were JP 2003-036879 and JP 2003-132931 since these references were the only copies yet to be made of record. Applicant is directed to MPEP section 1893.03 which states, "Although not specifically stated therein, the duty to disclose information material to patentability as defined in 37 CFR 1.56 is placed on individuals associated with the filing and prosecution of a national stage application in the same manner as for a domestic national application."

Drawings

3. The drawings received January 10, 2006 are acceptable for examination purposes.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the air" in line 8. There is insufficient antecedent basis for this limitation in the claim. This rejection is further applied to claims 2-8, all of which are dependent upon claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,714,276 (Okamoto).

Okamoto discloses a gas treatment apparatus 16, detachably connected to a fuel cell 20 comprising a housing, inlet and an outlet wherein a catalyst is provided in the housing 16 to selectively oxidize unreacted methanol (col. 1, ll. 56-61). The catalyst within the housing is placed so as to oxidize the unreacted methanol and then discharge the gas after oxidation (Fig. 1 as applied to claim 8). Regarding the features of the fuel cell, the claim is directed to a gas treatment apparatus which is detachably connected to a fuel cell. Since the class of invention is to the gas treatment apparatus which is external of the fuel cell, patentable weight has not been accorded to the fuel cell limitations recited in the preamble. Since the prior art gas treatment apparatus is connected to a fuel cell and is detachable, it has the same structural connectivity as the claims gas treatment apparatus (as applied to claim 9).

Air is supplied to the tank 16 via blower 43 to accelerate oxidation (Fig. 1 as applied to claims 10 and 11).

6. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication No. 2003/0215683 (Bruck).

Bruck teaches of a method of operating a fuel cell comprising oxidizing gas discharged from fuel cell module 20 including a solid polymer electrolyte membrane and catalytic electrodes placed on the membrane in catalytic converter 25 and discharging the gas into air (as applied to claim 13).

7. Claims 13, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Application Publication No. 2004/0265655 (Kozu).

Kozu teaches of a method of operating a direct methanol fuel cell main body 1 comprising oxidizing gas discharged from fuel cell module including a solid polymer electrolyte membrane and catalytic electrodes placed on the membrane in catalytic purifier 5 and discharging the gas into air (Fig. 1 and corresponding disclosure as applied to claim 13).

The discharged fuel is mixed with air prior to supplying the fuel to the catalytic purifier as shown in Fig. 7 (as applied to claims 15 and 16).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto as applied to claim 10 above, and further in view of Bruck

Okamoto does not teach of a heating unit in conjunction with the oxidation accelerating unit.

Bruck teaches of a device for electrically heating the exhaust gas catalytic converter (prior art claim 4 and Fig. 1).

The configuration would have improved the efficiency of oxidizing the waste gas generated by Okamoto.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Okamoto by adding a heater to the catalytic converter as taught by Bruck since it would have improved the waste gas oxidizing efficiency of the system.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koze as applied to claims 13 and 15 above, and further in view of Bruck.

Koze does not teach of a heating unit in conjunction with the oxidation accelerating unit.

Bruck teaches of a device for electrically heating the exhaust gas catalytic converter (prior art claim 4 and Fig. 1).

The configuration would have improved the efficiency of oxidizing the waste gas generated by Koze.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Koze by adding a heater to the catalytic converter as taught by Bruck since it would have improved the waste gas oxidizing efficiency of the system.

Allowable Subject Matter

10. Claim 1 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record are considered to teach, suggest or render obvious the fuel cell system of claim 1. For example, the prior art of record does not

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teach, suggest or render obvious the container storing fuel placed in contact with the fuel electrode and an outlet passage discharging the gas in the container into air wherein the outlet passage of the fuel storing container has a catalyst therein for oxidizing the gas.

Claims 2-8, all of which are dependent upon claim 1, are allowable for at least these reasons.

11. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record are considered to teach, suggest or render obvious the method of claim 14. For example, the prior art of record does not teach, suggest or render obvious a method wherein the fuel cell is a direct type fuel cell driven by supplying liquid fuel to the fuel electrode, wherein the fuel cell further includes a container that is placed in contact with the fuel electrode and stores said liquid fuel and wherein the oxidized gas discharged from the fuel cell is discharged from the fuel container.

Conclusion

12. Applicant is advised that subsequent filing of prior art not previously made of record may result in withdrawal of the allowable subject matter.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gregg Cantelmo/
Primary Examiner, Art Unit 1795